TES

Site: Syntex-Verona
ID#: MoD007452154
Break: 17.8
Other: Spring River Sampling

0751

SYNTEX, VERONA

Summary of Spring River Fish Analysis (fillet - ppt)

Year	Station 1	2	3	4	2,3,4 (ave.)
1984	4	4	3	2	3
85	3	3	.75(ND)	1	1.5
86	2.5	4.4	1.3	1.7	2.47
87	4.8	3.4	1.8	1.3	2.17
88	3.2	5.9	1.3	1.2	2.8
89	3.3	4.1	1.5	1.3	2.3
ave.	3.47	4.13	1.61	1.42	2.37
M*	-0.0033				0.0074

correlation coeffient (89) = 0.6%
correlation coeffient (88) = 4.0%

Variance %				
V (5 yr.)	25.8	27.1	52.2	28.0
V (6 yr.)	23.5	24.4	47.4	25.7
range**	2.62-4.32	3.08-5.18	0.81-2.41	1.03-1.81

*M = slope (conc vs time)
**future range of concentrations (ppt TCDD) based on 6 years

Conclusions

1. No statistically significant decrease or increase can be recognized at station 1.

2. No statistically significant increase is observed for the average concentration between stations 2, 3 and 4.

3. The concentrations in the fish samples to be collected in the future can be predicted based on this data.

4. Station 2 shows the most significant increase in TCDD concentrations over time. The slope of the plot of TCDD concentration versus time approaches 10 percent at a high.

Recommendation

Sample station 1 in 1990 at minimum and potentially station 2. Eliminate stations 3 and 4 from future sampling.

Yellow

SYNTEX, VERONA

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WSTM:SPFD:REMD:Curtis:du CUR 12-Syntex 3/20/90

Yellow

FEB 23 1990

MEMORANDUM

SUBJECT: Syntex, Verona, February 20, 1990 Meeting
Spring River Fish Analysis

FROM: Glenn Curtis
REMD/SPFD

TO: File

The subject meeting was held with Hieu Vu, E&E/TAT, to discuss the recent fish sampling data submitted by Syntex in November 1989. This information provided fish analysis results for sample stations 1, 2, 3 and 4. Sample data results for stations 1 through 4 for the years 1984 through the present are provided in Table 1.

TABLE 1 (fillet - ppt)

	Station 1	2	3	4	2,3,4 (ave.)
1984	4	4	3	2	3
85	3	3	.75(ND)	1	1.5
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88	3.2	5.9	1.3	1.2	2.8
89	3.3	4.1	1.5	1.3	2.3
ave.	3.47	4.13	1.61	1.42	2.37

*M = -0.0033
*r(89) = 0.6%
r(88) = 4.0%

*M = slope, r = correlation coeffient

WSTM:SPFD:REMD:Curtis:du CUR 12-14 2/22/90
REMD
Curtis
Curtis
9-22-90

REMD
Wright
WRIGHT
2/22/90

The statistical analysis of the data indicates that concentrations of TCDD in the fish are stabilizing at a predictable level. This is supported by the decreasing (approaching zero) correlation coefficient (r89 vs r88) shown in Table 1 and the fact that the line of TCDD concentrations versus time is approaching zero for stations 1 and stations 2, 3 and 4 (ave.). Also based on this data, predicitions of the future TCDD concentration in fish can be predicted. The predictable variance and range of TCDD concentrations in fish sampled in the future are shown in Table 2. **Only a five percent chance exists that succeeding years' data will fall outside of the range of concentrations shown below for each station.**

TABLE 2

Variance %	Station 1	2	3	4
V (5 yr.)	25.8	27.1	52.2	28.0
V (6 yr.)	23.5	24.4	47.4	25.7
range*	2.62-4.32	3.08-5.18	0.81-2.41	1.03-1.81

*future range of concentrations (ppt TCDD) based on 6 years

In consideration of the AOC signed with Syntex, the following conclusions are made.

1. No statistically significant decrease or increase can be recognized at station 1. A statistically significant indifference is observed at station 1. This means that the slope of the line of data plotted with TCDD concentrations versus time is clearly approaching zero or flat.

2. No statistically significant increase is observed for the average concentration between stations 2, 3 and 4. The plot of data for this average concentration over time is also approaching a statistically significant indifference in slope.

3. The concentrations in the fish samples to be collected in the future can be predicted based on this data. Refer to the range values shown in Table 2.

4. Of all stations, it appears that station 2 shows a significant increase in TCDD concentrations over time. The slope of the plot of TCDD concentration versus time approaches 10 percent at a high.

5. It may be advisable to eliminate sample stations 3 and 4 and just sample stations 1 and 2 in the future. Concentrations in all stations, as necessary, can be predicted.

cc: Sara Sullivan, CNSL